PEAK CURRENT SHARING IN A MULTI-PHASE BUCK CONVERTER POWER SYSTEM

ABSTRACT OF THE DISCLOSURE

A plurality of constant ON-time buck converters are coupled to a common load. The output of each buck converter is coupled to a common load via a series sense resistor. The regulated output voltage across the common load is compared to a reference voltage to generate a start signal. The start signal is alternately coupled to the controller on each buck converter. The ON-time of a master buck converter is terminated when a ramp signal generated from the regulator input voltage exceeds the reference voltage. All other slave converters have an ON-time pulse started by the start signal and stopped by comparing a sense voltage corresponding to their output current during their ON-time pulse to the peak current in the master converter during its ON-time. A counting circuit with an output corresponding to each of the plurality of buck converters is used to select which buck converter receives the start signal.